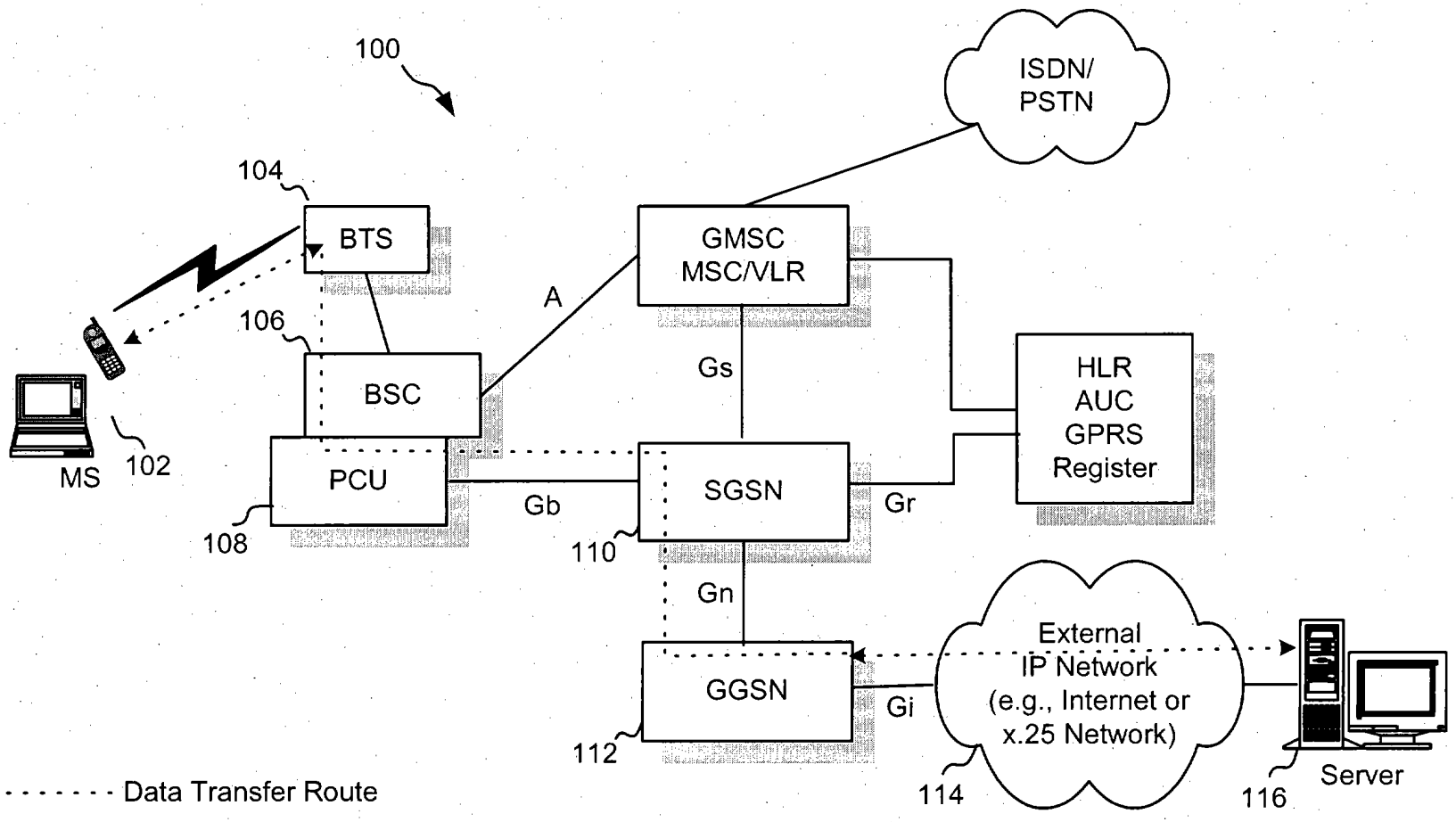
100
ISDN/
PSTN
104
BTS
GMSC
MSC/VLR
A
106
BSC
Gs
HLR
AUC
GPRS
Register
MS
102
PCU
Gb
SGSN
Gr
108
110
Gn
External
IP Network
(e.g., Internet or
x.25 Network)
GGSN
Gi
112
114
116
Server
Data Transfer Route

Figure 1

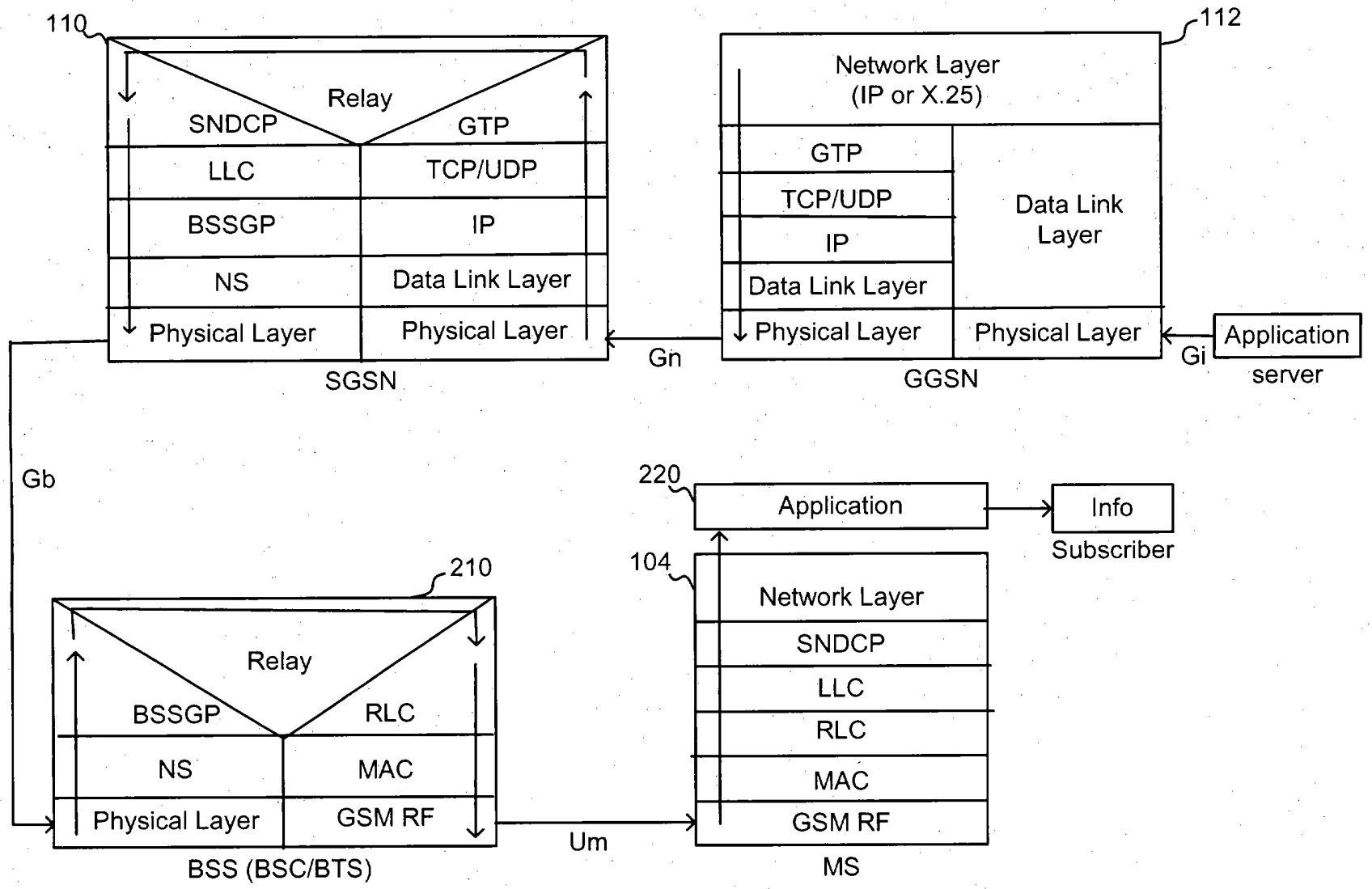
110
Relay
SNDCP
GTP
LLC
TCP/UDP
BSSGP
IP
NS
Data Link Layer
Physical Layer
Physical Layer
SGSN
Gn
112
Network Layer
(IP or X.25)
GTP
TCP/UDP
IP
Data Link Layer
Physical Layer
Data Link Layer
Physical Layer
GGSN
Gi
Application
server
Gb
220
Application
Info
Subscriber
104
Network Layer
SNDCP
LLC
RLC
MAC
GSM RF
210
Relay
BSSGP
RLC
NS
MAC
Physical Layer
GSM RF
Um
BSS (BSC/BTS)
MS

Figure 2

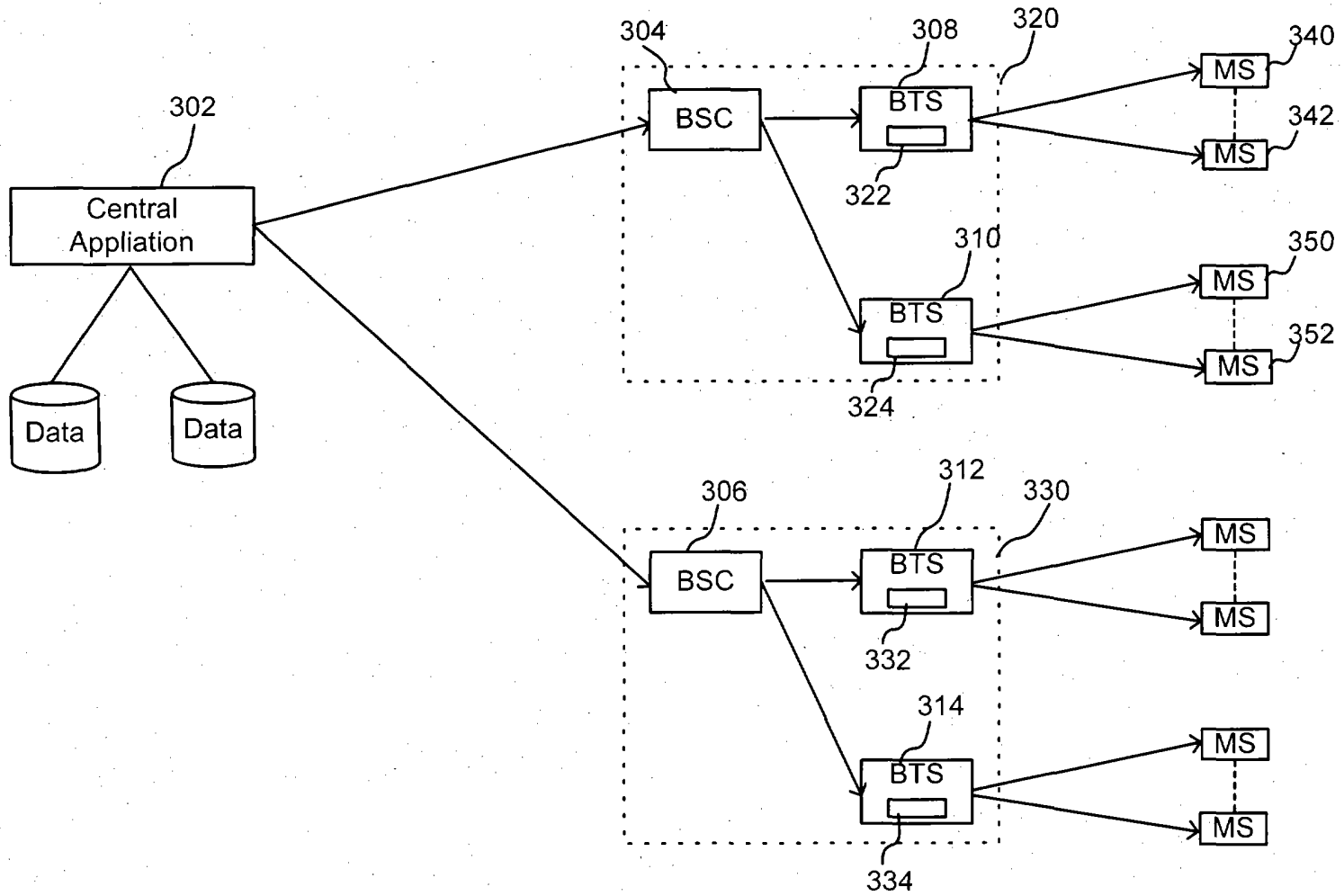
302
Central
Appliation
Data
Data
304
BSC
308
BTS
320
322
340
MS
342
MS
310
BTS
350
MS
324
352
MS
306
BSC
312
BTS
330
MS
332
MS
314
BTS
MS
334
MS

Figure 3

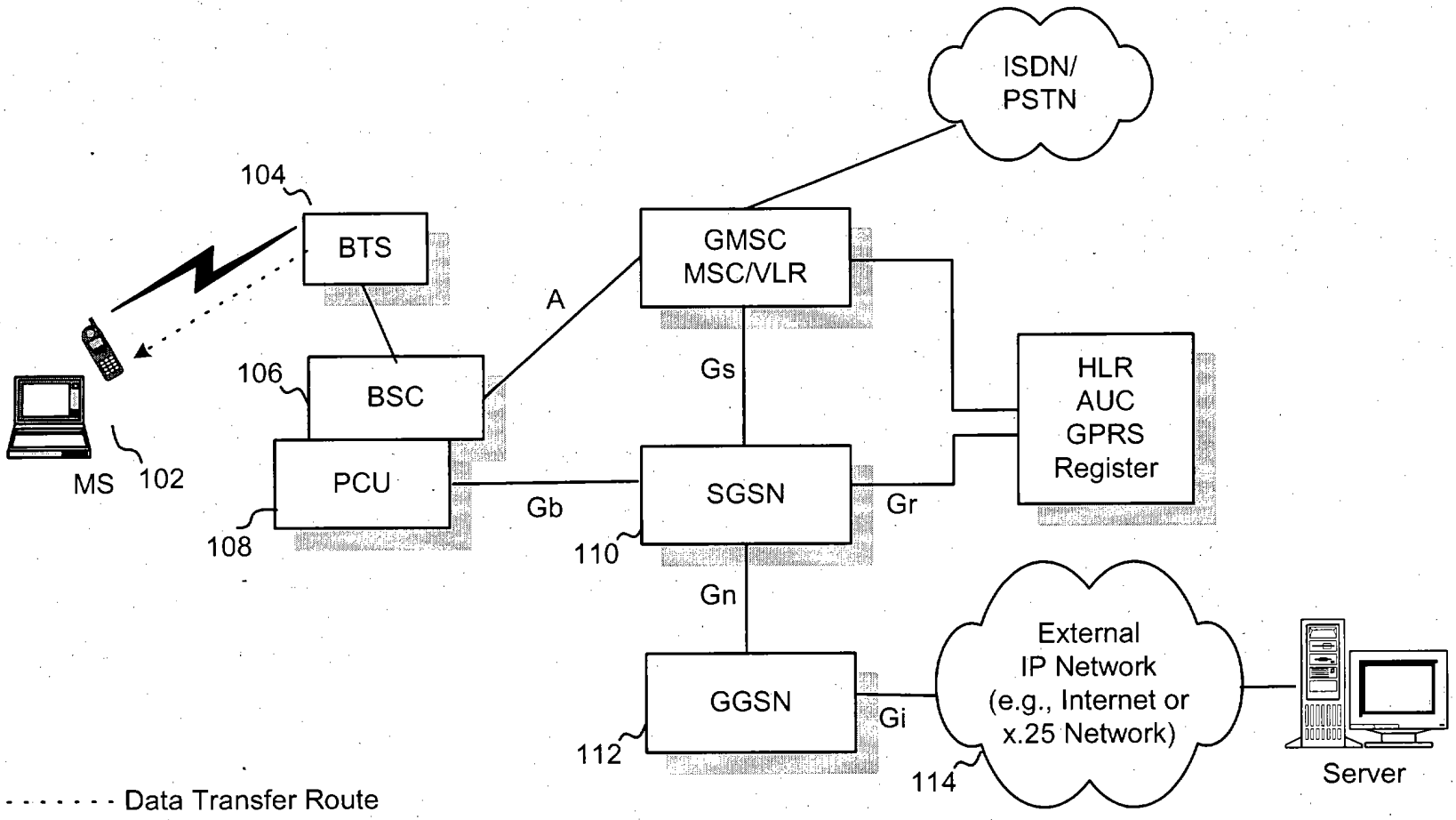
ISDN/
PSTN
104
BTS
GMSC
MSC/VLR
A
106
BSC
Gs
HLR
AUC
GPRS
Register
MS
102
PCU
Gb
SGSN
Gr
108
110
Gn
External
IP Network
(e.g., Internet or
x.25 Network)
GGSN
Gi
112
114
Server
Data Transfer Route

Figure 4